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MEDICAL RESEARCH LABORATORY



U. S. Naval Submarine Base
New London

MEMORANDUM REPORT ON

INFRAPAKE SUNGLASS LENS

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Memorandum Report
52-3

Bu Med Project
NM 003 041.51

Visual Engineering Section

8 March 1952

MEMORANDUM REPORT ON INFRAPAKE SUNGLASS LENS

Data Requested: An informal report on optic characteristics, light transmission, and protective features.

Requested by: BUMED-714 ltr of 15 Jan 1952

Material submitted: One (1) aviation type sunglass frame fitted with two (2) lenses designated as "INFRAPAKE" and described in requesting letter as being "composed of a plastic which has been suggested as substitute for standard neutral grey".

Tests conducted at MRL

1. Spectral transmittance in the visible, ultraviolet, and infra-red regions with Beckman D.U. Spectrophotometer.
2. Surface abrasion tests with rubber abraders.
3. Optical quality with lensometer.

Results of the tests:

1. Data on transmission - see enclosure (1)
 - (a) Visible radiation:
Calculated from trichromatic coefficients of the 1931 C.I.E. Standard Observer and Coordinate System.

$$x = .426$$

$$y = .405$$

$$\text{Transmission for Illuminant C} = 15.5\%$$

The plotted transmission curve shows low transmission in the short wave range of the visible and high transmission in the long range end. It is not a neutral glass and will not meet any specifications presently proposed for neutrality.

- (b) Ultraviolet:
Zero transmission below 380 and zero transmission in the erythral region.

- (c) Infrared:
Transmission does not exceed 10% up to 2000 mu.

2. Optical qualities.
When tested on the lensometer the errors of refraction did not exceed the tolerance for aviation glasses. They are of good optical quality and exhibit good surface polish, free from defects.

3. Surface hardness.
Equal to that of the best quality optical glass and far exceeding anything encountered in plastics.

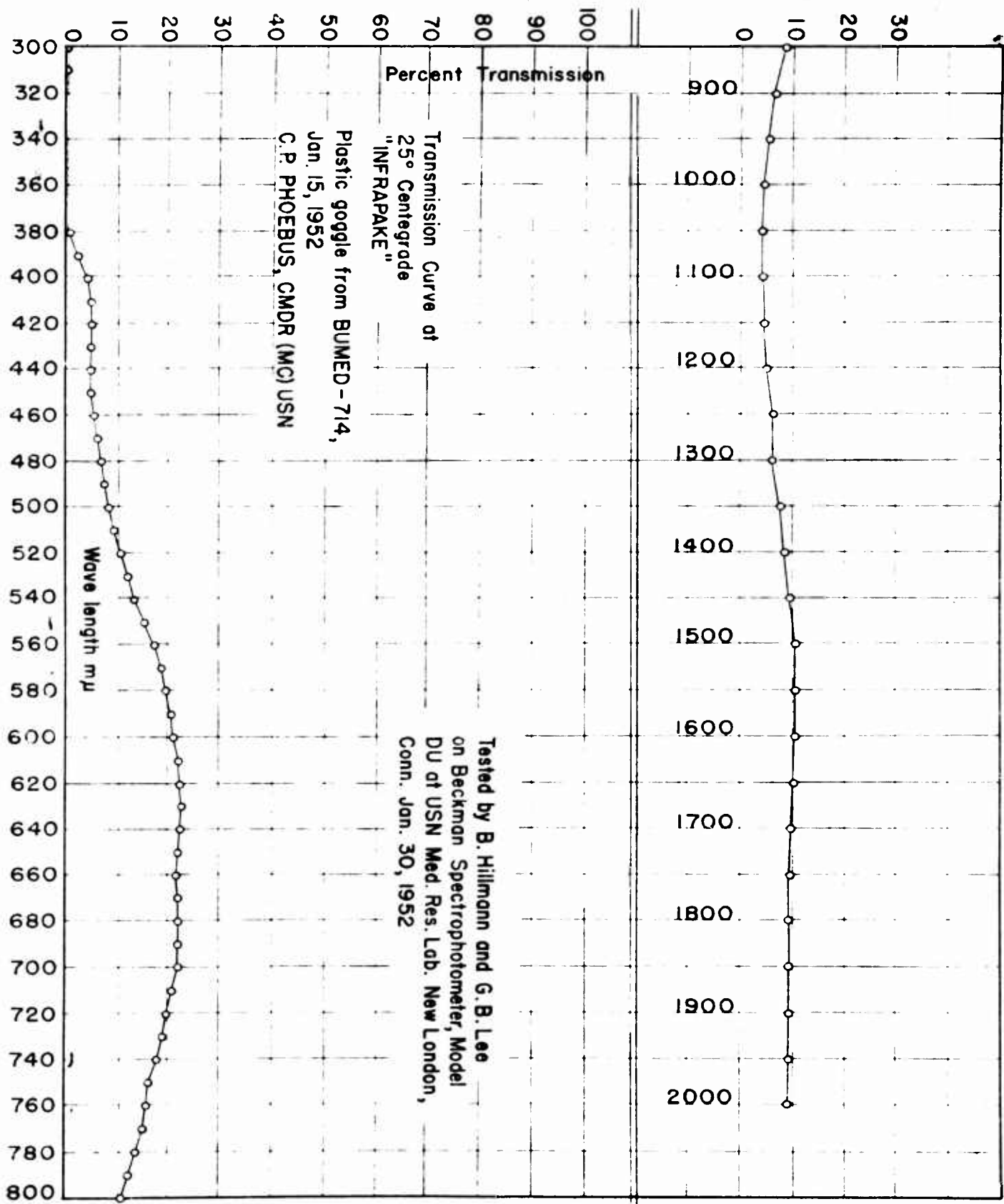
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**Material
Returned:**

The left lens, upon which the tests were made, is returned with this report; the right lens retained at MRL.

Notes:

This sunglass appears in every respect to resemble standard rose smoke. It cannot in any sense be recommended as a substitute for neutral grey. The lenses show no characteristics of plastics. It is suggested that an error has been made in the identification of these glasses.



Percent Transmission

Transmission Curve of
25° Centegrade
"INFRAPAKE"

Plastic goggle from BUMED-714,
Jan. 15, 1952
C.P. PHOEBUS, CMDR (MC) USN

Tested by B. Hillmann and G.B. Lee
on Beckman Spectrophotometer, Model
DU at USN Med. Res. Lab. New London,
Conn. Jan. 30, 1952

Wave length mμ